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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,673	09/05/2003	Stephen Neil Vaughn	2003B089	1722
23455	7590	08/23/2005	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149			RODRIGUEZ, JOSEPH C	
			ART UNIT	PAPER NUMBER
			3653	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,673

Applicant(s)

VAUGHN ET AL.

Examiner

Joseph C. Rodriguez

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-103 is/are pending in the application.
- 4a) Of the above claim(s) 23-103 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/11/05; 6/17/04, 9/5/03
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-22 in the reply filed on 8/03/05 is acknowledged. The traversal is on the grounds that no burden is present. This is not found persuasive as there is no burden requirement in this type of restriction. Further, Applicant has claimed multiple claim groupings spanning over 100 claims and numerous classes, thus a burden is clearly present.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

The information disclosure statement filed 9/5/03 fails to fully comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 as the publication date of the patent applications as well as the Fisher-Losterman reference are missing. Further, patent applications are usually listed in the non-patent literature section. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Specification

The abstract of the disclosure is objected to for improper language. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14, 16-19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Goeke et al. ("Goeke")(US 4,302,565).

Regarding claims 1-3, 16-19 and 21, Goeke (Fig. 1) teaches a process for selectively removing large catalyst particles from a reaction system comprising the steps of:

(a) feeding a plurality of catalyst particles into the reaction zone (near 30, 32; col. 11, ln. 5-10);

(b) contacting the plurality of catalyst particles with an oxygenate feedstock in the reaction zone under conditions effective to convert at least a portion of the feedstock to light olefins product (col. 10, ln. 8 et seq., col. 13, ln. 64 et seq.; see also examples);

(c) directing a portion of the plurality of catalyst particles from the reaction system to a separation unit (22), wherein the portion of the plurality of catalyst particles has a first median particle diameter (col. 7, ln. 44-68);

(d) separating the portion of the plurality of catalyst particles in the separation unit into a small catalyst stream and a large catalyst stream, wherein the small catalyst stream has a second median particle diameter less than the first median particle diameter (implicit from cyclone structure and function that particles exiting top of cyclone are fines and that particles exiting bottom are coarse particles that are separated via counter flow turbulizing streams); and

(e) directing at least a portion of the small catalyst stream to the reaction system (see recycling path from fines exit on top of cyclone 22 to filter 24 to compressor 25 to heat exchanger/stripper 26). Here, it is noted that since the reaction system is a loop, particles leaving the stripper or compressor can be regarded as being directed to the separation unit.

Regarding claims 4-14, it is implicit from the catalyst particle ranges taught by Goeke (col. 7, ln. 44-68 teaching ranges from 10-250 microns) and from the variety of

reduced catalyst particle sizes caused by the reaction chamber that the claimed ranges are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goeke in view of Vaughn et al. ("Vaughn")(WO 02/05950).

Goeke as set forth above teaches all that is claimed except for expressly teaching a catalyst regenerator and a molecular sieve claimed by Applicant. Further, under an alternative interpretation, the tunable counter-flow cyclone separator or the particle diameter sizes may not be regarded as inherent or taught above. Vaughn, however, expressly teaches a regenerator (p. 21, ln. 23-29) in an olefin production system and also teaches that a wide variety of molecular sieve catalyst particles can be used, including the SAPO particles claimed by Applicant (p. 4, 24). Moreover, Vaughn teaches that the catalyst particles are reduced in size during the reaction process and thus require separation and then regeneration for a more efficient reaction system (p. 23-25; see also p. 15 teaching particle diameter range of 20-300 microns). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Goeke as taught above as the reaction

system is improved by the regeneration of catalyst particles and the SAPO particles are well known catalyst equivalents. See MPEP 2144.06. Here, Examiner also takes Official Notice that it is known to make the cyclone separator counter-flow or tunable.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goeke in view of Vaughn as applied to claims 1-21 above, and further in view of Lattner et al. ("Lattner")(US 6,023,005).

Goeke and Vaughn as set forth above teach all that is claimed except for expressly teaching cooling a catalyst particle from the reaction system. Goeke, however, already teaches that the heat from recycled gas containing the catalyst particles should be removed (col. 11, ln. 44-62). Lattner also teaches that several methods exist to maintain the reaction system at an optimal temperature range, including using a catalyst cooler prior to particle regeneration (col. 6, ln. 1-54). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Goeke and Vaughn with a catalyst cooler to ensure that the reaction system operates at an optimal temperature range.

Conclusion

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Joseph C Rodriguez** whose telephone number is **571-272-6942** (M-F, 9 am – 6 pm, EST).

The **Official** fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

The examiner's **UNOFFICIAL Personal fax number** is **571-273-6942**.

Further, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see

<http://pair-direct.uspto.gov>

Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at **866-217-9197** (Toll Free).

Alternatively, inquiries of a general nature or relating to the status of this application or proceeding can also be directed to the **Receptionist** whose telephone number is **571-272-6584**. Further, the supervisor's contact information is Donald Walsh, 571-272-6944.

Signed by Examiner Joseph Rodriguez

Jcr

Handwritten signature of Joseph Rodriguez, consisting of stylized initials 'JR' followed by a long horizontal stroke.

August 19, 2005